Protection Special Interest Group

(PSIG)

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Goals of the PSIG

- **Develop a Community of Interest for space systems protection**
- **Understand and assess the protection related provisions of the new DoD Space Policy**
- **Forge a feedback loop from the acquisition and operational domains into space protection policy formulation**
- **Achieve Full Dimension Protection for Space Systems**

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Background

- **Architecture Councils established to identify and work cross-cutting architecture and technical issues**
  - **Special interest group for protection formed Nov ‘98**
- **DoD issues Space Policy Directive (9 July 1999)**
  - **Special emphasis on protection**
  - **OSD Space Policy initiates action to formulate a Space System Protection policy issuance**

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The PSIG Relationships to the Architecture Councils

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PSIG Overview

- **Chaired by Aerospace**
- **Three meetings to date (Nov '98, Feb '99, May '99)**
  - **Results available at:**
    - http://dii-af.hanscom.af.mil/chief_architect/domain/space.htm
- **Steering Group formed after PSIG III to guide PSIG (determine agenda, define products, etc.) and determine its disposition**
- **Planned PSIG Products**
  - **PSIG Interim Assessment: This briefing**
  - **Protection Related Activities Table: Matrix of known protection related activities, groups and products (title, description, POC, milestones)**
  - **Protection Inter-relationships Diagram: Graphic depicting relationships of major protection activities**
  - **Protection Related Issues: Finding regarding protection related issues for use in policy formulation support**

Next meeting at Aerospace LA in October

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Approach

- Facilitate a common vocabulary of protection for space systems
- Foster community of interest for the defensive aspects of the Space Control mission
  - Protection, Surveillance, Prevention
- Integrate community products to achieve standardization, balance, & efficiency across product centers and user communities; e.g.:
  - Cooperative reviews of protection requirements
  - Shared vulnerability & threat assessments for ground sites
  - Collaborative formulation of a common approach for protection in an era of commercialization
  - Input to DASD Defensive Space Control policy formulation

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Space Policy Cycle

The development, formulation, and validation of Space Policy is a continuous process

ISSUE POLICY

IMPLEMENTATION

ASSESS COMPLIANCE

EVALUATE POLICY

DETERMINE EFFECTIVENESS

DETERMINE NEW/EMERGING POLICY ISSUES

DEVELOP POLICY

FORMULATE

DISSEMINATE

OVERSEE

EVALUATE

MONITOR & ASSESS CHANGES IN THE ENVIRONMENT

Political

Economic

Resources

Legal

Technological

Social

Military

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Changes in the Environment

General Environments

- Political
- Military
- Economic
- Social
- Technology
- Resources
- Legal

Space Environments

- Threat
- Foreign/ International Space
- Civil/ Commercial Space
- Disruptive Technologies
- US/DoD Capabilities

Architectures
Plans & Programs
Operations
Susceptibilities
Vulnerabilities
Dependencies
Consequences of Loss

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Feedback to Protection Policy

OSD

Tasking

Draft

OASD C3I

Formulates Space Protection Policy

Space Protection

Issues Policy

Integrates input

Space Policy

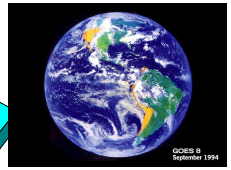
Derive Protection Guidance

Issue 1

Define Issues

Ventilate Issues in the COI

Facilitate A Consensus



Collect Changes in the Environment

Issue Papers

PSIG

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PSIG Interim Assessment

- **Space protection policy, implementation and sustainment are fragmented**
  - **Many activities but no “single manager” for space protection**
  - **Makes it hard to assess what we are protecting and whether it is the right stuff**
- **New space policy directs that space protection standards be created, implemented & evaluated**
- **Space protection correlates strongly with information protection**
  - **OSD (C3I) reorganization reflects this**
  - **Space is an information medium (collection & dissemination)**
  - **There are space unique considerations**
    - **On-orbit, launch**
    - **NMD, TMD**
  - **But no definitive boundary between space and information protection**

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Space Policy Protection Issues

- **Example space policy issues with protection implications**

Policy Provision	Protection Implications
(4.6.1.3) Ensure civil and commercial capabilities are used to the maximum extent feasible and practical (including use of allied and friendly capabilities, as appropriate), consistent with national security requirements.	Releasable data varies from country to country which renders consortia enterprises highly complex from a tech transfer perspective.
(4.6.1.6) Ensure space systems are seamlessly integrated within a globally accessible and secure information infrastructure	Some information cannot be "seamlessly integrated", including classified, critical unclassified, and proprietary data.
(5.9.5) Plan for and provide force protection, in coordination with the Commander in Chief of U.S. Space Command, for space forces assigned, deployed, and operating in their Area of Responsibility	How will this be implemented in a future environment that includes a mix of U.S. military, U.S. contractors, foreign nationals, along with assets of international consortia?

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PSIG I Agenda - Nov. 1998

Threat	Leonids Update and the Space Debris Challenge	Dr. Bill Ailor, Aerospace Corp
Policy	Full Dimension Protection for AeroSpace (A transitional concept) and DoD Space Systems Protect (DSSP)	Mr.Bob Schwartz-Aerospace
Analysis	Risk Management Equation for Cost of Protection	Dr. Donald Lewis-Aerospace
Analysis	Risk Management with a Focus on Protection	Mr. Al Hoheb-Aerospace
Policy	Defensive Counterspace Working Group and Space System Protection Concepts	Maj. Win Idle-HQ AFSPC
Analysis	Risk Management	Dr. James Chapek-Sandia National Labs
Analysis	EFX Quicklook	Mr. John Derby-MITRE
Administrative	PSIG Charter Discussion	Mr.Bob Schwartz-Aerospace

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PSIG II Agenda - Feb. 1999

Policy	Space Architecture Council Overview	John Shottes, MITRE
Administrative	PSIG Charter Update & Recap of First Meeting	Bob Schwartz, Aerospace
Threat	NAIC Threat Briefing	NAIC
Policy	Force Protection SPO Overview	Col Russell Peter, ESC/FD
Analysis	The Infrastructure Assurance Program of the Joint Program Office for Special Technology Countermeasures (JPO/STC)	Cindy Maddux, JPO/STC
Policy	DII-AF Information Warfare/Information Security (IW/IS) Architecture Council Overview	Dr. Marion Michaud, MITRE
Policy	DoD IW/IS Initiatives and Activities	Dr. Marion Michaud, MITRE
Policy	Space Mission Integration Office (SMIO) Overview	Maj Jack Wallick, SMIO
Policy	AF IW Battlelab Mission Brief	Capt Mark Chacon, IW Battlelab
Analysis	Space Opposing Forces (OPFOR) Experiment Update	Dale Deniston, MITRE

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PSIG III Agenda - May 1999

Policy	Space Policy as it Relates to Security Matters	Mr. Marc Berkowitz-OADUSD (Space Policy)
Analysis	DoD Enhanced Mobile Satellite Services	Mr. Mark Adams, MITRE
Policy	USAF Force Protection (Saudi Arabia & Bosnia)	Mar. Carl Kline-AF/XOFX
Analysis	Space Related Ground Facilities Status Report	Ms. Ruth Duggan-Sandia National Lab
Analysis	Information Design Assurance Red Team Effort (IDART)	Mr. Brad Wood-Sandia National Lab
Analysis	Intelligence Concerns with Technology Transfer	Dr. Malina Hills-Aerospace
Analysis	National Security Study Group	Ms. Patty Benner Antsen

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PSIG IV Agenda - Oct. 1999*

Policy	Vision Briefing	BG Hamel, SMC/CV
Analysis	Security and Counterintelligence Practices at Labs and Centers	Dr. Tangney
Threat	NAIC Threat Briefing	NAIC
Policy	Space Policy	Mr Brunasky
Policy	International Cooperation	BMDO
Analysis	Enabling Technologies	AFRL
Policy	Laser Technology Protection	Col Boone
Analysis	Breakout Groups	

* Worksho

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The Three Components of FDP

How is “Full Dimension Protection” applied to space systems?

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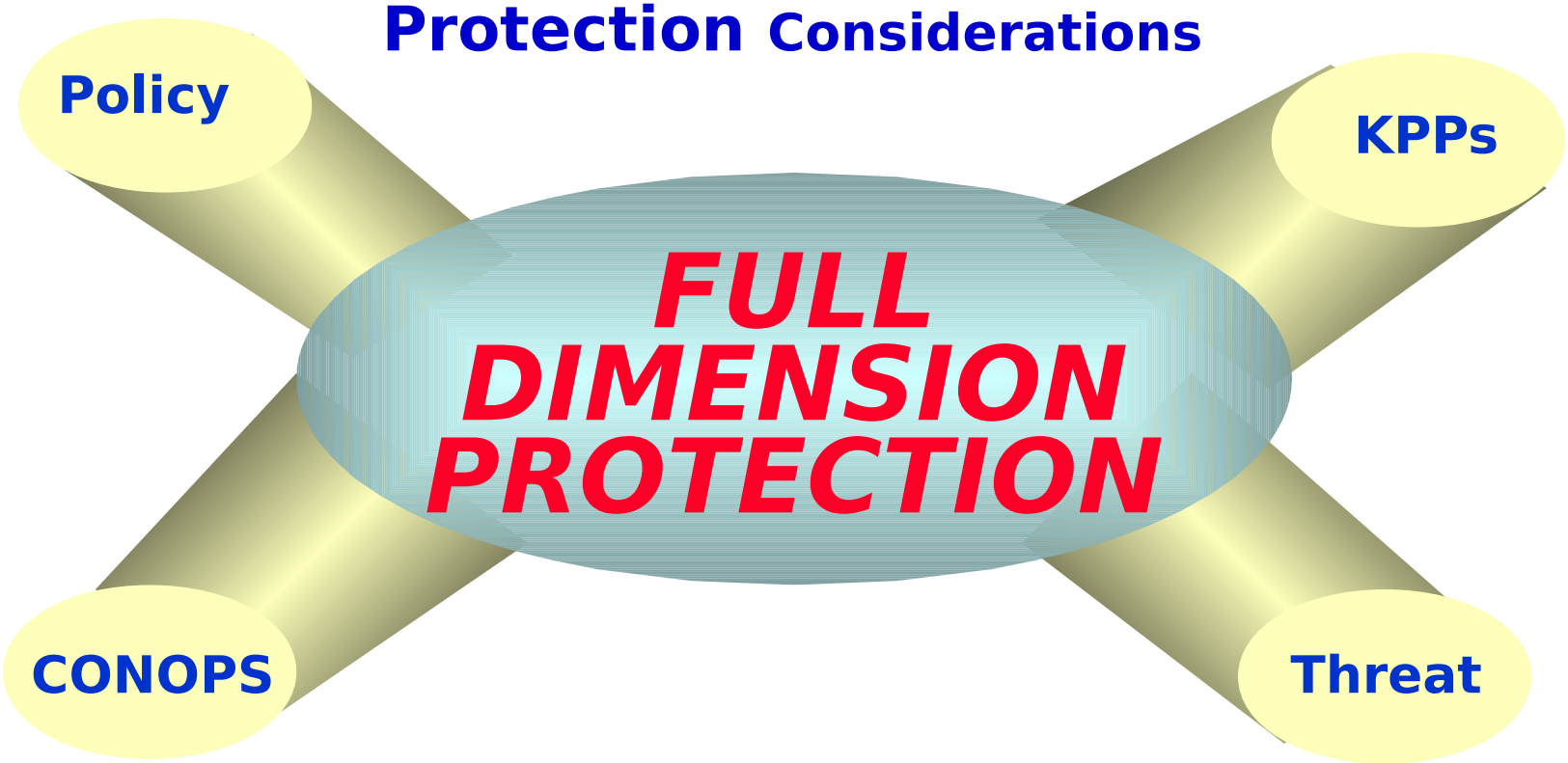
The Three Components of FDP

First:

Protection Considerations



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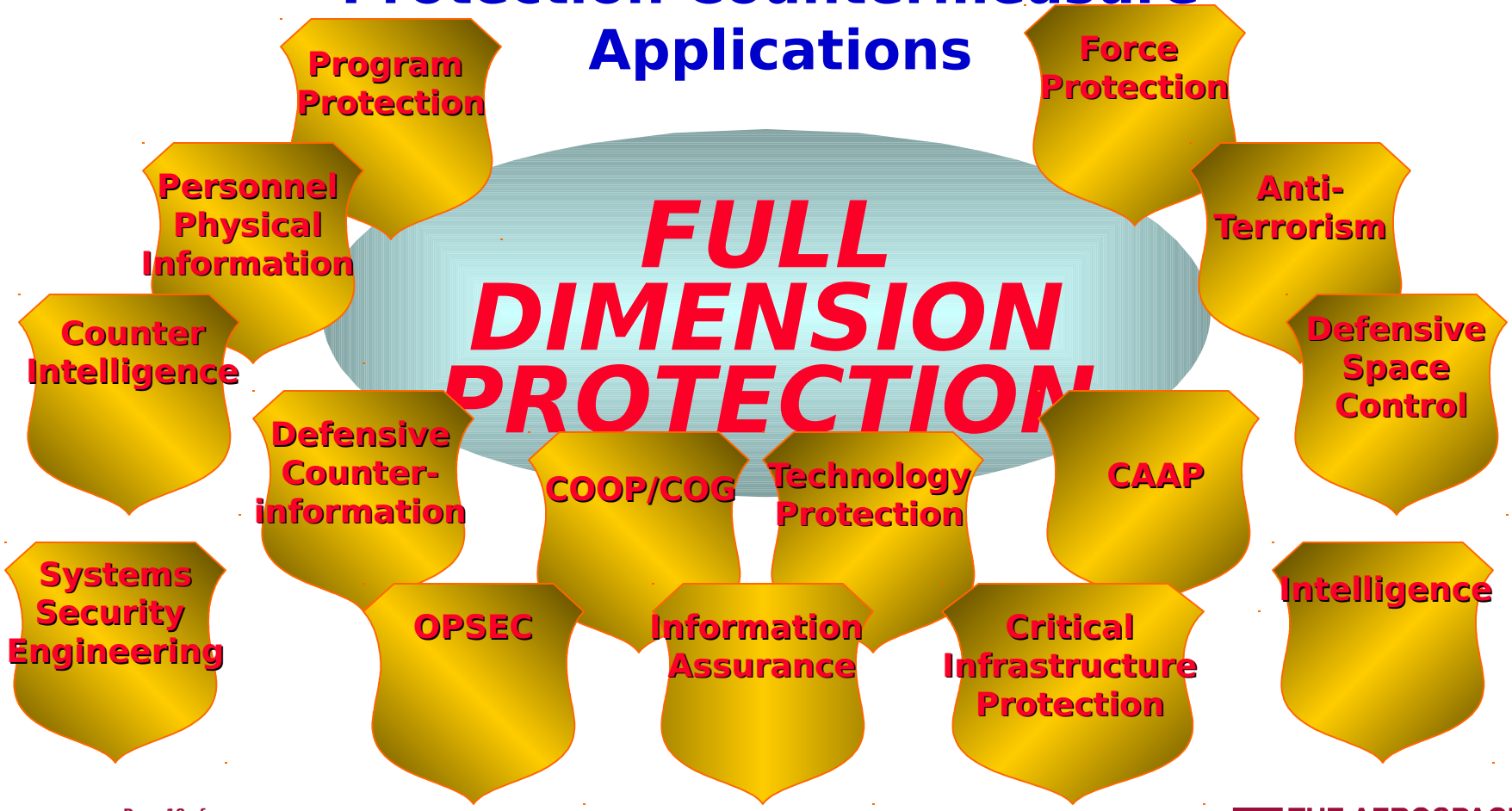
The Three Components of FDP

Second:
Protection Countermeasure Applications



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The Three Components of FDP

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